thermostabile opsonizing substance which may be artificially produced by immunizing an animal."

These observations may be made clinically by employing the method originally used by Ehrlich to simulate the condition of a paroxysm as follows: A ligature is put around the finger and then the finger put in ice-water (5 to 10 minutes) and then in warm water a similar length of time. Blood smears are then examined. Eason concludes as follows: "Thus it appears that phagocytosis is as much dependent on the previous chilling of the blood as is the extracellular lysis; another indication that the amboceptor is the cause of both processes."

On the Behavior of the Eosinophile Leukocytes in Cases of Pulmonary Tuberculosis.—JOHN M. SWAN and HOWARD T. KARSNER (*New York Med. Jour.*, 1907, lxxxv, 539). One of the authors (Swan) in 1904, in a study of the blood in 25 cases of pulmonary tuberculosis, came to the following conclusions: "The absence of the eosinophiles from the blood may be looked upon as an unfavorable prognostic sign. The increase of these cells while the patient is under treatment may be taken as an indication that the progress of the disease has a tendency to become arrested." This present study has to bear especially on this point and consists of the differential counts in 31 cases of pulmonary tuberculosis. In all cases 500 leukocytes were counted and the specimens were stained by Wright's method. The studies are from the Philadelphia General Hospital. In bedridden patients counts were made once a week or oftener if the case was ending fatally. In those not in bed, monthly counts were made. In a series of 31 cases, 26 were fatal and 5 were stationary or improved at the time the observations were discontinued. With the exception of 2 cases, the eosinphile cells were below 1 per cent. as a rule at periods varying from 102 days before death to the day of death. In these cases they varied from 1 to 2 per cent. for more or less lengthy periods before death. In the typically fatal cases the count was usually under 1 per cent.—as low as 0.2 per cent.; and the cells were even absent just before death. In the stationary or improved cases the eosinophilic count usually rose until discharge or discontinuance of the observations. The authors show interesting tables and charts and then append the counts of all cases in detail. They conclude as follows:

"In the light of these studies we should say that in cases of pulmonary tuberculosis the eosinophile cells tend to disappear from the circulating blood as the progress of the disease brings the fatal termination nearer, and that as the patient improves under treatment and as the disease shows a tendency to become arrested, the eosinophiles reappear in the circulating blood. It appears that this tendency of the eosinophile cells up and down may be of some use as a prognostic sign. It appears that this fluctuation of the eosinophile cells is a measure of the severity of the secondary infection with pyogenic organisms and not an indication of the extent of the tuberculous process itself; in fact the reappearance of eosinophilic cells in the circulating blood coincident with the improvement in the cases of phthisis is probably due to the removal of the chemotactic influence of the products of growth of the pus organisms and the reassertion of the influence of the tuberculin manufactured in the tuberculous lesions."

Pre-icteric Itching.—D. RIESMAN (*Amer. Med.*, 1907, ii, 79) gives a brief *resume* of the literature bearing on this interesting subject and notes that, in many reported instances, the itching preceded the jaundice by some time. He then reports in detail three cases of jaundice due to different causes, in all of which pre-icteric itching was marked. Riesman thinks that the older view that itching is due to a deposit of bile pigment in the skin can no longer be maintained. This has also been the view of several other writers. Rolleston also doubtes whether itching is due entirely to the presence of bilirubin and admits the possibility that other concomitant poisons may give rise to it or that the dry, ill nourished condition of the skin is the cause. The following facts seem to bear out the view: (1) Itching according to Frerichs and Lancereaux occurs in only about one-fifth of the cases of jaundice. (2) It bears no constant relation to the depth of the jaundice. (3) It may come and go repeatedly in a given case, while the jaundice persists undiminished. (4) The occurrence of itching that appears before the jaundice and coincidently runs with it for some time. (5) The prompt, sometimes instantaneous disappearance of the itching after drainage of the gall-bladder long before the jaundice has had time to disappear.

The cause of the itching is unknown. In all probability it is some metabolic poison or poisons which the liver in its normal state either neutralizes as it passes through in the portal blood or destroys when brought to it by the blood of the hepatic artery. The poison must be the bile, as shown by the sudden ceasing as soon as the bile is given free drainage either externally or internally. In ordinary icteric itching it most probably enters the circulation with the bile, probably by way of the lymphatics, but in pre-icteric itching or in itching depending upon hepatic disturbances without jaundice it passes into the blood independently. Riesman concludes as follows: (1) Itching sometimes precedes the onset of jaundice by a variable length of time. (2) This itching may cease the moment the jaundice is established or it may continue indefinitely. (3) Itching, whether pre-icteric or icteric, is not due to a deposit of bile pigment in the skin. (4) When itching exists for which no cause can be found, the liver, as a possible factor, should not be overlooked. (5) Pre-icteric itching is suggestive, though not pathognomonic of the existence of malignant disease involving the liver or the biliary passages. This last statement is borne out by the views of some eminent authorities, though the cases are too few for any positive opinion on this point.

The Treatment of Acute Failure of the Heart. — CHARLES BOLTON (*Lancet*, 1907, i, 870) notes that acute failure of the heart may be brought on in two distinct classes of cases: (1) The failure may be due to some organic condition affecting the heart, the blood, the bloodvessels and, therefore, initiated in a purely mechanical manner. (2) It may be the result of some nervous disturbance, such as occurs in sudden death from vagus inhibition or in cases of tachycardia. Bolton, on account of time and space, deals mainly with the first class of cases on account of its greater frequency and importance. Acute failure of the heart is brought about in two ways: By any condition interfering (1) with the emptying of its cavities during systole or (2) the filling of its cavities during diastole. As regards the first of these conditions the loss of